

## Safety relays - PSR-SCP- 24UC/ESAM4/8X1/1X2 - 2963912

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Safety relay for emergency stop and safety door monitoring up to SIL 3 or Cat. 4, PL e according to EN ISO 13849, single- or two-channel operation, 8 enabling current paths,  $U_s = 24\text{ V AC/DC}$ , plug-in screw terminal block

### Why buy this product

- Up to Cat.4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061
- Manually monitored and automatic activation in a single device
- Single and two-channel control
- 8 enabling current paths, 1 signaling current path



### Key Commercial Data

Packing unit	1 STK
GTIN	 4 017918 899707
GTIN	4017918899707
Weight per Piece (excluding packing)	429.000 g
Custom tariff number	85371099
Country of origin	Germany

### Technical data

#### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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#### Dimensions

Width	45 mm
Height	99 mm
Depth	114.5 mm

#### Ambient conditions

Ambient temperature (operation)	-20 °C ... 55 °C (observe derating)
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## Technical data

### Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Max. permissible relative humidity (operation)	75 % (on average, 85% infrequently, non-condensing)
Max. permissible humidity (storage/transport)	75 % (on average, 85% infrequently, non-condensing)
Shock	15g
Vibration (operation)	10 Hz ... 150 Hz, 2g
Maximum altitude	≤ 2000 m (Above sea level)

### Input data

Rated control circuit supply voltage $U_s$	24 V AC/DC -15 % / +10 %
Power consumption at $U_s$	typ. 4.25 W (AC)
	typ. 2.23 W (DC)
Rated control supply current $I_s$	typ. 177 mA AC
	typ. 93 mA DC
Inrush current	2 A ( $\Delta t = 10$ ms at $U_s$ )
Current consumption	< 50 mA (with $U_s/I_x$ to S10)
	< 50 mA (with $U_s/I_x$ to S12)
	> -50 mA (with $U_s/I_x$ to S22)
	0 mA (with $U_s/I_x$ to S34)
	0 mA (with $U_s/I_x$ to S35)
Voltage at input/start and feedback circuit	24 V DC -15 % / +10 %
Typical response time	< 380 ms (automatic start)
	< 60 ms (manual start)
Typ. starting time with $U_s$	< 500 ms (when controlled via A1)
Typical release time	< 20 ms (when controlled via S11/S12 and S21/S22)
	< 50 ms (when controlled via A1)
Concurrence input 1/2	$\infty$
Recovery time	< 1 s
Status display	2 x green LEDs
Maximum switching frequency	0.5 Hz
Max. permissible overall conductor resistance	approx. 11 $\Omega$ (Input and start circuits at $U_s$ )
Filter time	2 ms (at A1 in the event of voltage dips at $U_s$ )
	max. 1.5 ms (at S10, S12; test pulse width)
	7.5 ms (at S10, S12; test pulse rate)
	Test pulse rate = 5 x Test pulse width

### Output data

Contact type	8 enabling current paths
	1 signaling current path
Contact material	AgSnO <sub>2</sub>
Minimum switching voltage	5 V AC/DC
Maximum switching voltage	250 V AC/DC (Observe the load curve)

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### Technical data

#### Output data

Limiting continuous current	6 A (N/O contact, pay attention to the derating)
	6 A (N/C contact)
Inrush current, minimum	10 mA
Maximum inrush current	20 A ( $\Delta t \# 100$ ms)
Sq. Total current	50 A <sup>2</sup> (observe derating)
Interrupting rating (ohmic load) max.	144 W (24 V DC, $\tau = 0$ ms)
	288 W (48 V DC, $\tau = 0$ ms)
	110 W (110 V DC, $\tau = 0$ ms)
	88 W (220 V DC, $\tau = 0$ ms)
	1500 VA (250 V AC, $\tau = 0$ ms)
Maximum interrupting rating (inductive load)	42 W (24 V DC, $\tau = 40$ ms)
	42 W (48 V DC, $\tau = 40$ ms)
	42 W (110 V DC, $\tau = 40$ ms)
	42 W (220 V DC, $\tau = 40$ ms)
Switching capacity min.	50 mW
Output fuse	10 A gL/gG (N/O contact)
	6 A gL/gG (N/C contact)

#### General

Relay type	Electromechanical relay with forcibly guided contacts in accordance with EN 50205
Mechanical service life	10 x 10 <sup>6</sup> cycles
Nominal operating mode	100% operating factor
Net weight	429 g
Mounting type	DIN rail mounting
Mounting position	any
Degree of protection	IP54
	IP20
Min. degree of protection of inst. location	IP54
Control	one and two channel
Housing material	PBT
Housing color	yellow

#### Connection data

Connection method	Screw connection
pluggable	Yes
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12

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## Technical data

### Connection data

Stripping length	7 mm
Screw thread	M3

### Safety-related characteristic data

Stop category	0
Designation	IEC 61508 - High demand
Safety Integrity Level (SIL)	3
Designation	IEC 61508 - Low demand
Safety Integrity Level (SIL)	3
Designation	EN ISO 13849
Performance level (PL)	e
Category	4
Designation	EN 62061
Safety Integrity Level Claim Limit (SIL CL)	3

### Standards and Regulations

Shock	15g
Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178/VDE 0160
Rated insulation voltage	250 V AC
Rated surge voltage/insulation	Basic insulation 4 kV: between all current paths and housing Safe isolation, reinforced insulation 6 kV: between A1/A2 and 63/64, 73/74, 83/84 between S10/S11/S12/S33/S34/S35 and 63/64, 73/74, 83/84 between 63/64, 73/74, 83/84 among one another
Degree of pollution	2
Overvoltage category	III
Vibration (operation)	10 Hz ...150 Hz, 2g
Conformance	CE-compliant

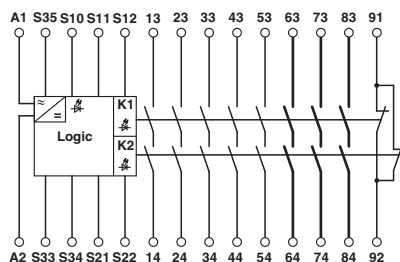
### Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

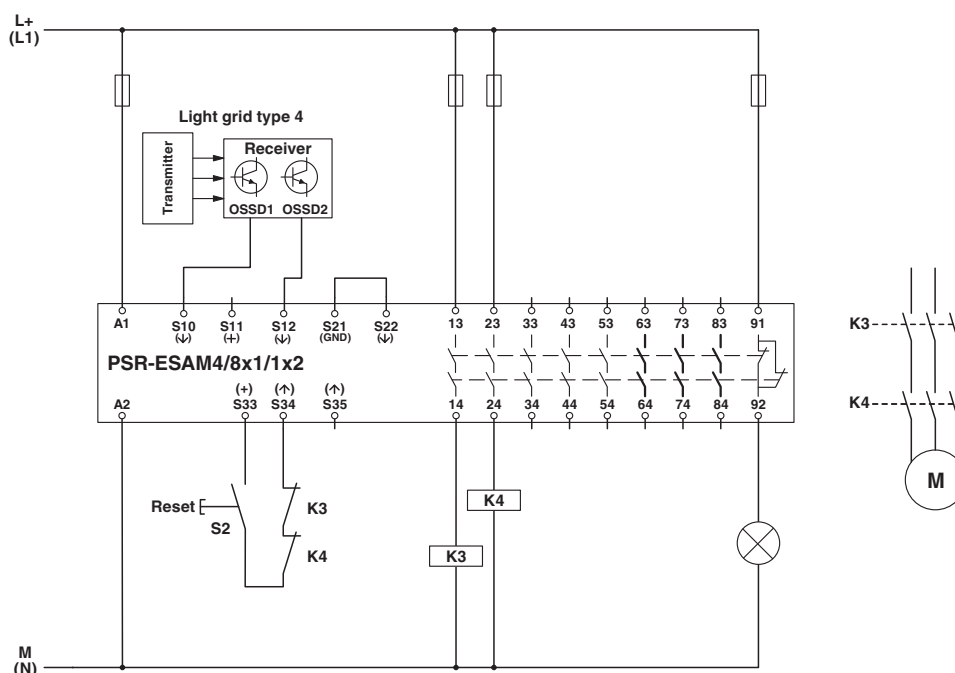
## Drawings

# Safety relays - PSR-SCP- 24UC/ESAM4/8X1/1X2 - 2963912

Circuit diagram



Circuit diagram



Light grid monitoring

## Classifications

eCl@ss

eCl@ss 4.0	27371102
eCl@ss 4.1	27371102
eCl@ss 5.0	27371901
eCl@ss 5.1	27371901
eCl@ss 6.0	27371819
eCl@ss 7.0	27371819
eCl@ss 8.0	27371819
eCl@ss 9.0	27371819

ETIM

ETIM 2.0	EC000196
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## Classifications

### ETIM

ETIM 3.0	EC001449
ETIM 4.0	EC001449
ETIM 5.0	EC001449
ETIM 6.0	EC001449

### UNSPSC

UNSPSC 6.01	30211901
UNSPSC 7.0901	39121501
UNSPSC 11	39121501
UNSPSC 12.01	39121501
UNSPSC 13.2	39121501

## Approvals

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UL Listed / Functional Safety / EAC / EAC / cUL Listed / cULus Listed

#### Ex Approvals

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
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Functional Safety			01/205/5363.01/16
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EAC			7500651.22.01.00244
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EAC			EAC-Zulassung
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cUL Listed



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